Department of Transportation
**Federal Aviation Administration**
Aircraft Certification Service
Washington, DC

**TSO-C27**

**Date:** 3/15/52

# Technical Standard Order

## Subject: TSO-C27, TWIN SEAPLANE FLOATS

INTRODUCTION

Under section 601 of the Civil Aeronautics Act of 1938, as amended, and Parts 3, 4a, 4b, and 6 of the Civil Air Regulations issued pursuant thereto, the Administrator of Civil Aeronautics is authorized to adopt standards for seaplane floats intended for installation on civil aircraft. In adopting these standards, consideration has been given to existing Government and industry standards for the minimum strength and performance requirements for seaplane floats intended for use on civil aircraft. This Technical Standard Order is intended to serve as a criterion by which the product manufacturer may produce floats which will meet standards acceptable to the Civil Aeronautics Administration. In lieu of the above procedure, floats may be approved as part of the aircraft design, in which case, the aircraft manufacturer should submit the pertinent float drawings and include them on the aircraft drawing list. Such floats shall comply with the strength and performance requirements for floats as stated in this Order, and the approval thereof will be recognized by all Civil Aeronautics Administration representatives.

DIRECTIVE

Provision. The strength and performance requirements for seaplane floats as set forth in Sections 3 and 4 of National Aircraft Standards Specification NAS 807 dated June 1, 1951*, with the exceptions hereinafter noted, are hereby established as minimum safety standards for seaplane floats intended for use on all civil aircraft.**

EXCEPTIONS: Section 4.3.3.4 Unsymmetrical Landing. Two-Float Landing with Drift.

Third sentence - "The side load shall be $\frac{\tan \beta}{4}$ times the step landing load of 4.3.3.1."

*Copies may be obtained from the American Aeronautical Forum, 527 Washington Loan and Trust Building, Washington 4, D.C.

**The strength requirements contained herein are conservative for rotorcraft twin-float installation.

Section 4.3.3. Limit Load Factors for General Structure Design. Definition of symbols following subpart (b). "$V_{s_o}$ = airplane design stalling speed at design landing weight with zero thrust and landing flaps or other high lift devices in position for landing (miles per hour, EAS).

W = one half the airplane design landing weight."

> Note: For single-engine aircraft, the design landing weight is the design maximum weight for which approval is desired. For multi-engine aircraft which meet the requirements of CAR 3.242 the landing weight may be less than the maximum design weight.

Application. Seaplane floats complying with the specifications appearing in this Order are hereby acceptable for use on civil aircraft.

Floats already approved by the Administrator may continue to be installed by the aircraft manufacturer on production aircraft:-

(1) for which an application for original type certificate is made prior to the effective date of the Order;

(2) the prototype of which is flown within one year after the effective date of this Order; and

(3) the prototype of which is not flown within one year after the effective date of this Order if due to causes beyond the applicant's control.

If an alteration or replacement involving a change in type or model of floats is made, or if an original installation on an individual airplane is made, previously type certificated floats may be installed.

SPECIFIC INSTRUCTIONS

Marking. In addition the identification information required in Section 3.5 of Specification NAS 807, (except that "NAS Specification No. 807" is not required), each seaplane float shall be permanently marked with the Technical Standard Order designation CAA-TSO-C27, to identify the seaplane float as meeting the requirements of this Order in accordance with the manufacturers' statement of conformance described below. This identification will be accepted by the Civil Aeronautics Administration as evidence that the established minimum safety requirements for seaplane floats have been met. For floats approved as part of the aircraft design, no identification other than the aircraft manufacturer's part or drawing number is required.

Data Requirements. None.

Effective Date. After March 15, 1952, specifications contained in this Order will constitute the basis for Civil Aeronautics Administration approval of seaplane floats for use on certificated aircraft.

Deviations. Requests for deviation from, or waiver of, the requirements of this Order, which affect the basic airworthiness of the component, should be submitted for the approval of the Chief, Aircraft Engineering Division, Office of Aviation Safety, Civil Aeronautics Administration. These requests should be addressed to the nearest Regional Office of the Civil Aeronautics Administration, Attention: Chief, Aircraft Engineering Branch.

Conformance. The manufacturer shall furnish to the Civil Aeronautics Administration, Aircraft Engineering Division, Attention: W-298, Washington 25, D.C., a written statement of conformance signed by a responsible official of his company, setting forth that the designated seaplane float model to be produced by him meets the minimum safety standards established in this Order. Immediately thereafter, distribution of the seaplane floats conforming with the terms of this Order may be started and continued. A statement of conformance is not required for floats approved as part of the aircraft design.

The prescribed identification on the seaplane floats does not relieve the aircraft manufacturer or owner of responsibility for the proper installation of the seaplane floats on his aircraft, nor waive any of the requirements concerning type certification of the aircraft in accordance with existing Civil Air Regulations.

If complaints of non-conformance with the requirements of this Order are brought to the attention of the Civil Aeronautics Administration, and investigation indicates that such complaints are justified, the Administrator will take appropriate action to restrict the use of the product involved.

Copies of this Technical Standard Order and other Technical Standard Orders may be obtained from the Civil Aeronautics Administration, Aviation Information Office, Washington 25, D.C.

/S/ F. B. Lee
Acting Administrator of Civil Aeronautics